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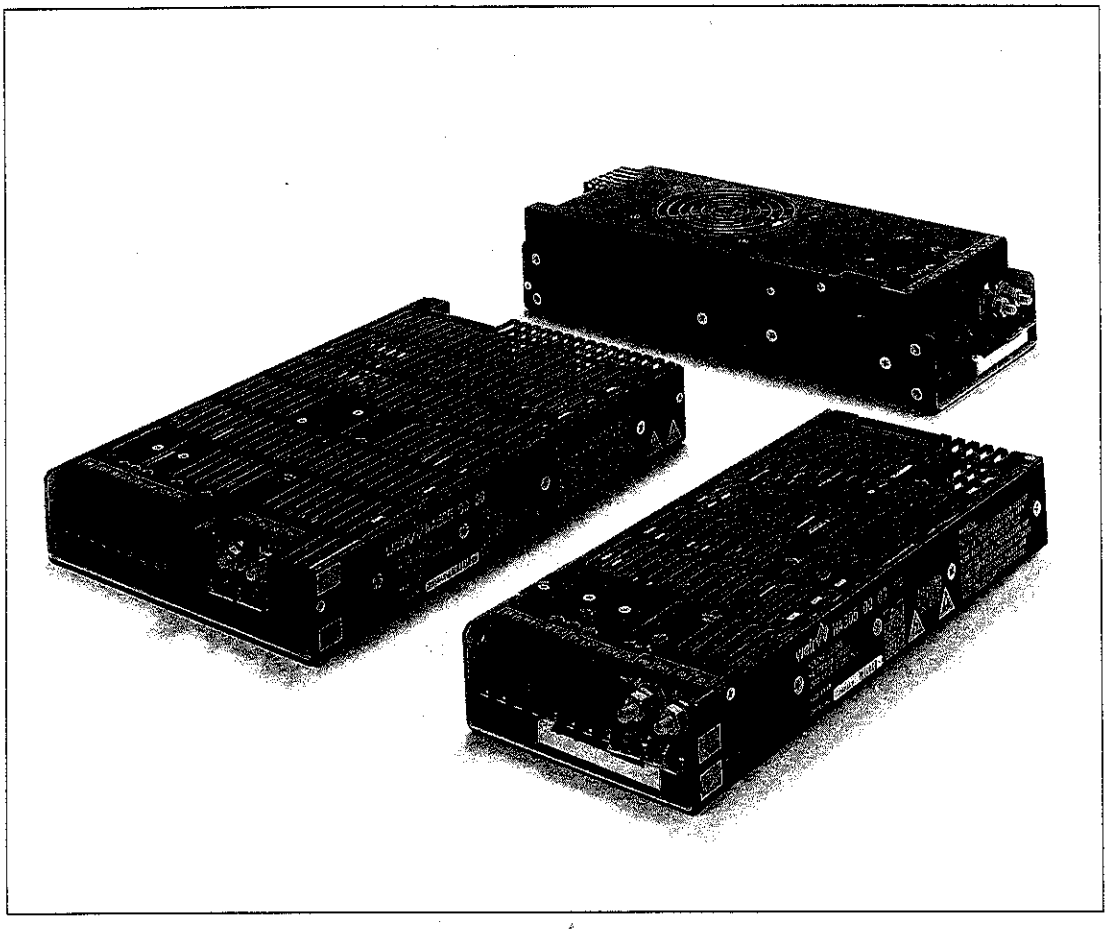
Part I – AC-to-DC Power Supplies

LAMBDA'S W SERIES

Jameco Part Number 210905



The World's Smallest BABT-Approved 300-1000W Multiples

Lambda's ultra-compact W Series multiple output power supplies help you create high density computer-based telecommunications systems. They feature triple and pent outputs from 300-1000 watts. 300W models are available with 48VDC input. The W Series has worldwide safety agency approvals of BABT, IEC950, UL1950 and CSA950, and EMI compliance to FCC, VDE0871 Class B conducted and radiated. They offer several options which simplify and shorten the design process, including output power good signal, remote on/off, 85-132/176-264VAC input (autorange available as an option), current sharing on the main output, built in thermal protection, and more.

Lambda's W Series has the lowest profile (1.77") and the smallest footprint of any 300-500W multiple on the market today. They're the ideal solution for communications and computer peripheral applications.

W SERIES SPECIFICATIONS

AC Input
line .....85-132VAC or 176-264VAC (jumper selectable), 45-440Hz. Input autorange available as an option.

Efficiency
80% typical.

DC Input
48VDC input available on WD300 only.

EMI
Conducted EMI conforms to VDE 0871 Level B 10kHz-30MHz.
FCC Part 15 Subpart J Class B.
EN55022 and BS6527 Level B.
VDE 0871 Level B 10kHz-1000Mhz.
Radiated EMI conforms to VDE 0871 Level B 10kHz-1000Mhz.

DC Output
Voltage range shown in table.

Output Power
WA/WD300: 300 watts max. 200 watts max on convection cooled models. WA400: 400 watts max. WA500: 500 watts max. 300 watts max on convection cooled models.

Regulated Voltage
regulation, line .....±0.2% on main and auxiliary outputs for ±15% input change.
regulation, load .....±1% on main output; 2% for load changes from 20-100% on auxiliary outputs. Minimum load of 5A required on main output of WA/WD300, and WA400; 8A on WA500.
ripple and noise .....50mv pk-pk on main output; 1% pk-pk on auxiliary outputs. 10Hz-30MHz bandwidth.
temperature coefficient .....0.02%/°C on main output. 0.05%/°C on auxillary outputs.

Hold-Up Time

Package Model	Input Voltage (VAC)	Hold-Up Time (mSec)
WA303, 305	95/190	18
	230	28
WA403, 405	95/190	13
	230	20
WA505	95/190	18
	230	28

Overload Protection
Automatic electronic current limiting circuit limits the output current to a preset value, thereby providing protection for the load as well as the power supply.

Overvoltage Protection
Overvoltage protection is provided on the main 5 volt output only.

In-Rush Current Limiting
The turn-on in-rush current will not exceed 50 amps peak on WA303, 305, 403, 405. 20 amps peak on WD305. 40 amps peak on WA505.

Isolation Ratings
Type tested 1 minute without breakdown, "Y" capacitors removed.
Input to ground & input to output: 4KV RMS 50Hz.
Output common to ground: 700VDC.
Production tests on complete units, 1 minute without breakdown.
Input to grounded outputs: 1.6KV RMS 50Hz.
Outputs to ground: 700VDC.
Input to output resistance: >100M Ω at 500VDC.

Cooling
The WA/WD300, 500 are convection cooled and are available with an optional fan. Integral fan on WA400.

Operating Temperature
0 to +70°C with linear derating from +50 to +70°C. Derate to 50% power at +70°C.

Remote Sensing
Available on main output for voltage drops of 0.5V max for WA/WD300 and 400. Remote sensing on the main output of the WA500 for voltage drops up to 0.25V max.

Options
Input autorange, output power good, remote on/off, integral fan, and current share (main output only).
*See option selector guide for option numbers.

Physical Data

Package Model	Weight (lbs.)	Size (inches)
WA303 (with fan)	5.7	11.8 × 4.9 × 2.56
WA303 (without fan)	5.1	11.8 × 4.9 × 1.77
WA305 (with fan)	6.2	11.8 × 4.9 × 2.56
WA305 (without fan)	5.5	11.8 × 4.9 × 1.77
WA403 (with fan)	5.7	11.8 × 4.9 × 2.56
WA405 (with fan)	6.2	11.8 × 4.9 × 2.56
WA505 (with fan)	7.7	11.8 × 7.48 × 2.56
WA505 (without fan)	6.8	11.8 × 7.48 × 1.77
WD305 (with fan)	6.4	11.8 × 4.9 × 2.56
WD305 (without fan)	5.5	11.8 × 4.9 × 1.77

Safety Agency Approvals
BS6301, BS7002, IEC950, UL950, EN60950, CSA234 Level 6, VDE0805.

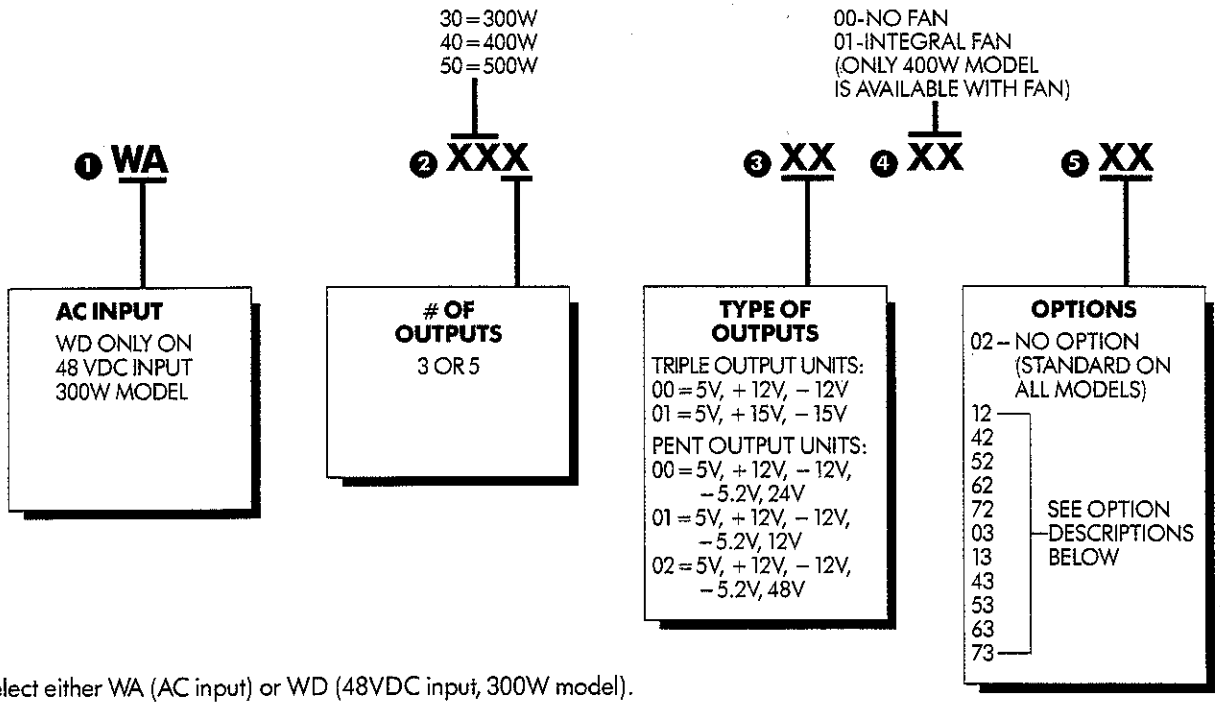
Guarantee
One year guarantee includes labor as well as parts. Guarantee applies to operation at full published specifications at end of 1 year.

OEM Ratings Table – Triple and Pent Outputs

Vo	MAX CURRENT (AMPS)* AT AMBIENT TEMPERATURE OF 50°C	60°C	70°C	MAX POWER (WATTS) AT AMBIENT TEMPERATURE OF 50°C	60°C	70°C	Vout ADJ. RANGE	COMPLETE ELEC. SPEC. PG.	UNIT PRICE PER DELIVERED QUANTITY 1	10	100	MODEL
5	40.0 (30.0)	30.0 (22.5)	20.0 (15.0)	300 (200)	225 (150)	150 (100)	4.7-5.5VDC	61	$395	$375	$321	WA303 00 00 02
12	10.0	7.5	5.0				±2% Fixed					
−12	4.0	3.0	2.0				±2% Fixed					
5	40.0 (30.0)	30.0 (22.5)	20.0 (15.0)	300 (200)	225 (150)	150 (100)	4.7-5.5VDC	61	395	375	321	WA303 01 00 02
15	8.0	6.0	4.0				±2% Fixed					
−15	3.3	2.5	1.7				±2% Fixed					
5	40.0	30.0	20.0	400	300	200	4.7-5.5VDC	61	510	485	414	WA403 00 01 02
12	10.0	7.5	5.0				±2% Fixed					
−12	6.6	5.0	3.3				±2% Fixed					
5	40.0	30.0	20.0	400	300	200	4.7-5.5VDC	61	510	485	414	WA403 01 01 02
15	8.0	6.0	4.0				±2% Fixed					
−15	5.3	4.0	2.7				±2% Fixed					
5	50.0 (40.0)	37.5 (30.0)	25.0 (20.0)	300 (200)	225 (150)	150 (100)	4.7-5.5VDC	61	490	466	398	WA305 00 00 02
12	10.0	7.5	5.0				±2% Fixed					
−12	4.0	3.0	2.0				±2% Fixed					
−5.2	4.0	3.0	2.0				±2% Fixed					
−24	4.0	3.0	2.0									
5	50.0 (40.0)	37.5 (30.0)	25.0 (20.0)	300 (200)	225 (150)	150 (100)	4.7-5.5VDC	61	490	466	398	WA305 01 00 02
12	10.0	7.5	5.0				±2% Fixed					
−12	4.0	3.0	2.0				±2% Fixed					
−5.2	4.0	3.0	2.0				±2% Fixed					
12	8.0	6.0	4.0									
5	50.0 (40.0)	37.5 (30.0)	25.0 (20.0)	300 (200)	225 (150)	150 (100)	4.7-5.5VDC	61	490	466	398	WA305 02 00 02
12	10.0	7.5	5.0				±2% Fixed					
−12	4.0	3.0	2.0				±2% Fixed					
−5.2	4.0	3.0	2.0				±2% Fixed					
48	2.0	1.5	1.0				±2% Fixed					
5	50.0 (40.0)	37.5 (30.0)	25.0 (20.0)	300 (200)	225 (150)	150 (100)	4.7-5.5VDC	61	550	523	447	WD305 00 00 02
12	10.0	7.5	5.0				±2% Fixed					
−12	4.0	3.0	2.0				±2% Fixed					
−5.2	4.0	3.0	2.0				±2% Fixed					
24	4.0	3.0	2.0				±2% Fixed					
5	50.0	37.5	25.0	400	300	200	4.7-5.5VDC	61	595	565	483	WA405 00 01 02
12	10.0	7.5	5.0				±2% Fixed					
−12	4.0	3.0	2.0				±2% Fixed					
−5.2	4.0	3.0	2.0				±2% Fixed					
24	4.0	3.0	2.0				±2% Fixed					
5	50.0	37.5	25.0	400	300	200	4.7-5.5VDC	61	595	565	483	WA405 01 01 02
12	10.0	7.5	5.0				±2% Fixed					
−12	4.0	3.0	2.0				±2% Fixed					
−5.2	4.0	3.0	2.0				±2% Fixed					
12	8.0	6.0	4.0				±2% Fixed					
5	50.0	37.5	25.0	400	300	200	4.7-5.5VDC	61	595	565	483	WA405 02 01 02
12	10.0	7.5	5.0				±2% Fixed					
−12	4.0	3.0	2.0				±2% Fixed					
−5.2	4.0	3.0	2.0				±2% Fixed					
48	2.0	1.5	1.0				±2% Fixed					
5	80.0 (50.0)	60.0 (37.5)	40.0 (25.0)	500 (300)	375 (225)	250 (150)	4.7-5.5VDC	61	720	684	585	WA505 00 00 02
12	10.0	7.5	5.0				±2% Fixed					
−12	10.0	7.5	5.0				±2% Fixed					
−5.2	15.0 (10.0)	11.3 (7.5)	7.5 (5.0)				±2% Fixed					
24	4.0	3.0	2.0				±2% Fixed					
5	80.0 (50.0)	60.0 (37.5)	40.0 (25.0)	500 (300)	375 (225)	250 (150)	4.7-5.5VDC	61	720	684	585	WA505 01 00 02
12	10.0	7.5	5.0				±2% Fixed					
−12	10.0	7.5	5.0				±2% Fixed					
−5.2	15.0 (10.0)	11.3 (7.5)	7.5 (5.0)				±2% Fixed					
12	8.0	6.0	4.0				±2% Fixed					
5	80.0 (50.0)	60.0 (37.5)	40.0 (25.0)	500 (300)	375 (225)	250 (150)	4.7-5.5VDC	61	720	684	585	WA505 02 00 02
12	10.0	7.5	5.0				±2% Fixed					
−12	10.0	7.5	5.0				±2% Fixed					
−5.2	15.0 (10.0)	11.3 (7.5)	7.5 (5.0)				±2% Fixed					
48	2.0	1.5	1.0				±2% Fixed					
5	125.0	100.0	75.0	1000	750	500	5.0-5.5VDC	61	1365	1296	1170	WA1005 17 01 22
12	15.0	11.25	7.5				±2% Fixed					
12	15.0	11.25	7.5				±2% Fixed					
12	15.0	11.25	7.5				±2% Fixed					
5	15.0	11.25	7.5				±2% Fixed					

*Ratings in parenthesis are for convection cooled units without fans.

W SERIES PART NUMBERING SYSTEM



❶ Select either WA (AC input) or WD (48VDC input, 300W model).

❷ Select the power level and the number of outputs required. You can choose either 3 or 5 outputs in the 300W (30) and 400W (40) packages. The 500W (50) package is a 5 output model only.

❸ Select the type of output, either triple or pent.

Triple output models are:
- 00 = 5V, + 12V, – 12V
- 01 = 5V, + 15V, – 15V

Pent output models are:
- 00 = 5V, + 12V, – 12V, – 5.2V, 24V
- 01 = 5V, + 12V, – 12V, – 5.2V, 12V
- 02 = 5V, + 12V, – 12V, – 5.2V, 48V

❹ Select whether you need a power supply without a fan (00) or with an integral fan (01). Only the 400W models come with an integral fan.

❺ Select the type of options. All models are designed with a thermal strip as standard and will be 02 on your model. Only one option can be added to a power supply.

Example: W Series 500W AC input base model; pent output with 5V, + 12V, – 12V, – 5.2V, 24V: with integral fan; input autorange, thermal trip, remote inhibit and DC Power Good

would read WA505 00 01 13.

OPTION	DESCRIPTION	PRICE 1	10	100
12	Current Share Output #1 only Power Fail Inverter, Inhibit	$49	$47	$40
42	VME Type Power Fail, Inhibit	49	47	40
52	SELV Option for Units with Output #5 less than 24VDC, Power Fail, Inhibit	49	47	40
62	SELV Option for Units with Output #5 greater than 24VDC, Power Fail, Inhibit	49	47	40
72	Power Good, Power Fail, Inhibit	49	47	40
03	Auto Ranging	34	32	28
13	Same as Option #12 with Auto Ranging Added	83	79	67
43	Same as Option #42 with Auto Ranging Added	83	79	67
53	Same as Option #52 with Auto Ranging Added	83	79	67
63	Same as Optoin #62 with Auto Ranging Added	83	75	67
73	Same as Option #72 with Auto Ranging Added	83	79	67
02	Thermal Trip (Standard on all models)		No Charge	
Fan	Integral Fan on WA/WD300 or WA500	60	57	49

*Only (one) option can be added to a power supply.

Part I – AC-to-DC Power Supplies

W SERIES MECHANICAL DRAWINGS

WA303
WA305

Connectors

All terminal blocks Vernitron 'Beau' range 6-32 UNC screws

AC Input TB1 both models

1	2	3	4	5
115V Link		E	N	L

Output 1 2 x M6 studs both models
-ve sense connected to auxiliary OV via external shorting bar

Outputs TB2 & TB3 WA303

5	4	3	2	1
OP1 -	sense -	OP1 +	sense +	PF

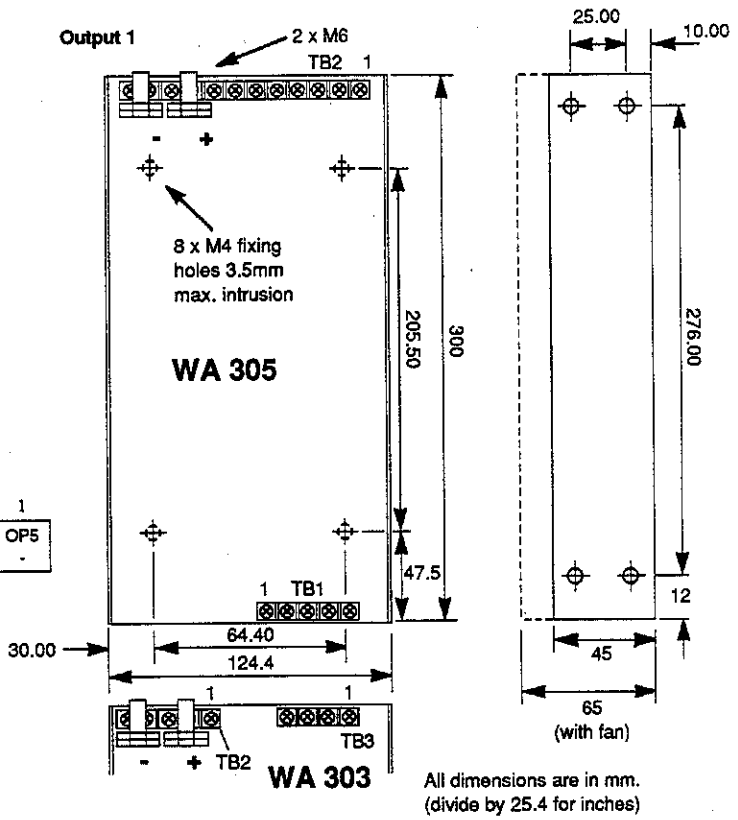
TB2

4	3	2	1
OP2 +	OV	OV	OP3 -

TB3

Outputs TB2 WA305

12	11	10	9	8	7	6	5	4	3	2	1
OP1 -	sense -	OP1 +	sense +	PF	OP2 +	OV	OV	OP3 -	OP4 -	OP5 +	OP5 -



All dimensions are in mm.
(divide by 25.4 for inches)

WA403
WA405

Connectors

All terminal blocks Vernitron 'Beau' range 6-32 UNC screws

AC Input TB1 both models

1	2	3	4	5
115V Link		E	N	L

Output 1 2 x M6 studs both models
-ve sense connected to auxiliary OV via external shorting bar

Outputs TB2 & TB3 WA403

5	4	3	2	1
OP1 -	sense -	OP1 +	sense +	PF

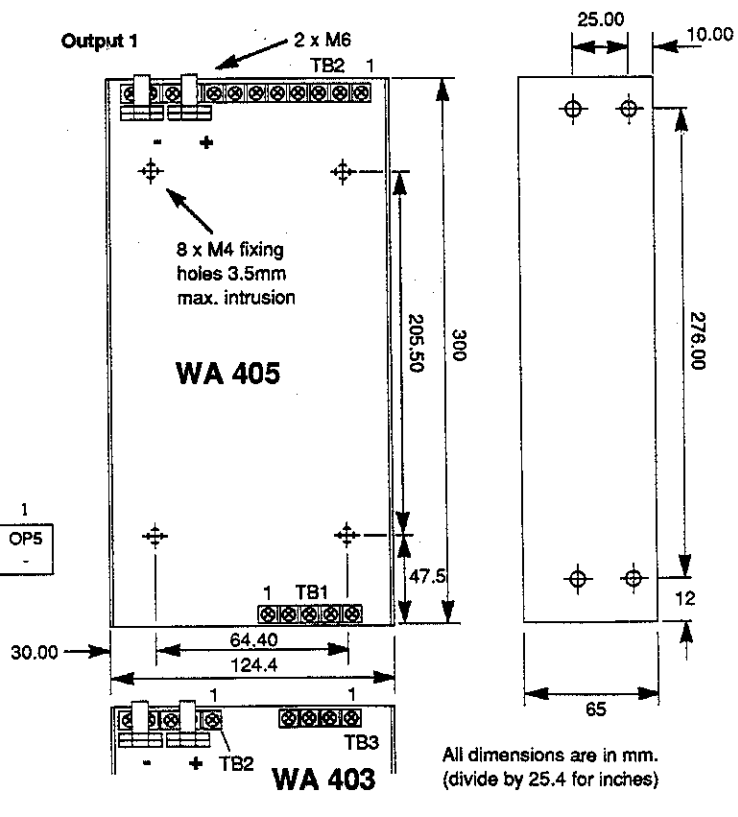
TB2

4	3	2	1
OP2 +	OV	OV	OP3 -

TB3

Outputs TB2 WA405

12	11	10	9	8	7	6	5	4	3	2	1
OP1 -	sense -	OP1 +	sense +	PF	OP2 +	OV	OV	OP3 -	OP4 -	OP5 +	OP5 -



All dimensions are in mm.
(divide by 25.4 for inches)

W SERIES MECHANICAL DRAWINGS

WA505

Connectors

All terminal blocks Vernitron 'Beau' range 6-32 UNC screws

AC Input TB1

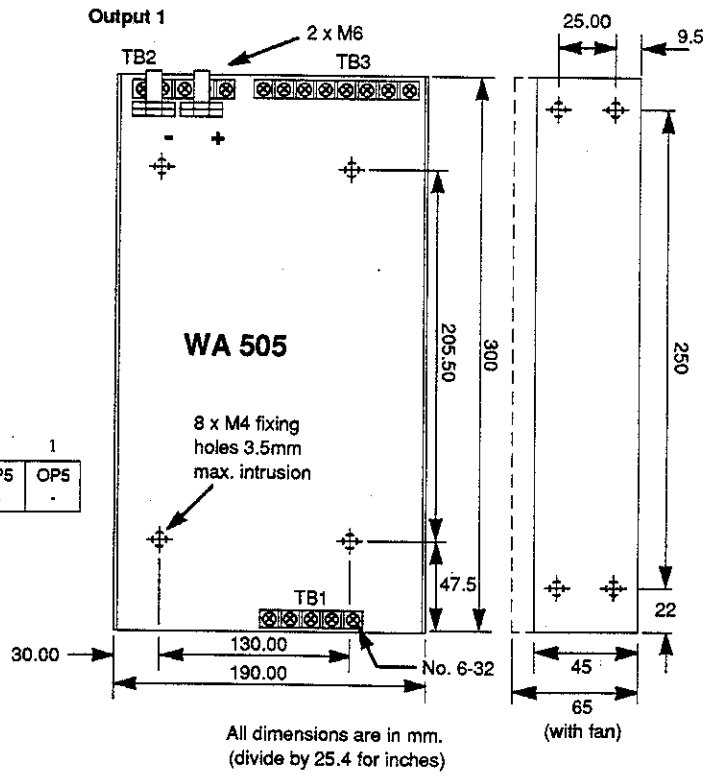
1	2	3	4	5
115V Link		E	N	L

Outputs TB2 (split connector 8/5 way)

13	12	11	10	9	8	7	6	5	4	3	2	1
OP1 -	sense -	OP1 +	sense +	N/C	PF	OP2 +	OV	OV	OP3 -	OP4 -	OP5 +	OP5 -

Output1 2 x M6 studs

-ve sense connected to auxiliary OV via external shorting bar



All dimensions are in mm.
(divide by 25.4 for inches)

WD305

Connectors

All terminal blocks Vernitron 'Beau' range 6-32 UNC screws

DC Input TB1

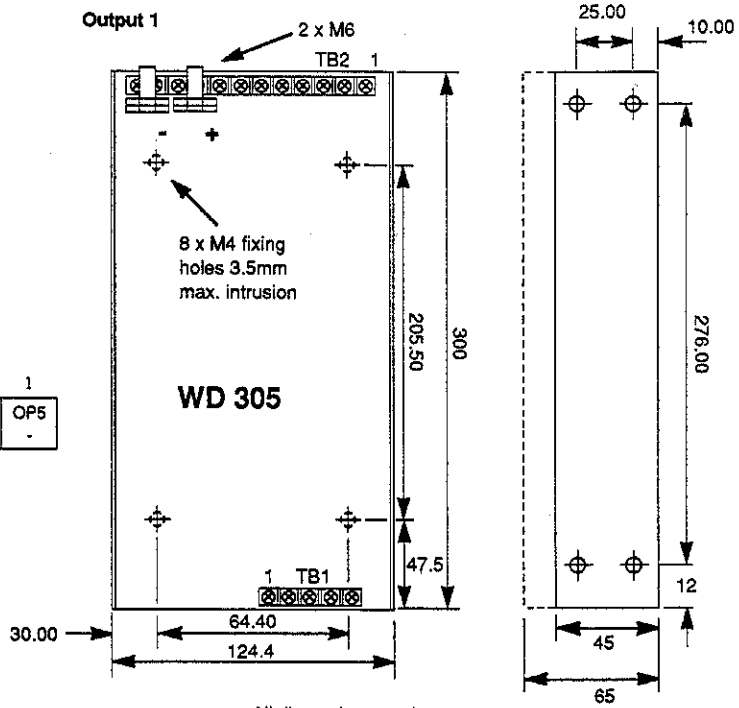
1	2	3	4	5
+48V out	-48V out	E	IN +	IN -

Outputs TB2

12	11	10	9	8	7	6	5	4	3	2	1
OP1 -	sense -	OP1 +	sense +	LBA	OP2 +	OV	OV	OP3 -	OP4 -	OP5 +	OP5 -

Output 1 2 x M6 studs

-ve sense connected to auxiliary OV via external shorting bar



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